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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/489,324 | 01/21/2000 | Kristin Butcher | 00P7423US | 5692 |

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07/17/2003

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EXAMINER

WOO, ISAAC M

ART UNIT

PAPER NUMBER

2172

DATE MAILED: 07/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/489,324

Applicant(s)

BUTCHER, KRISTIN

Examiner

Isaac M Woo

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4 and 38-60 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 5-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4 and 38-60 is/are rejected.
- 7) ☒ Claim(s) 39, 42-43, 50, 53 and 55 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

24

DETAILED ACTION

1. This action is in response to Applicant's Amendments on April 28, 2003 have been considered but they are not persuasive for amended claim 4 and for newly added claim 38, 49, 54 and 60.
2. The applicant amended claims 4 and newly added claims 38-60. Claims 1-3 and 5-37 are canceled. Claims 4 and 38-60 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 38, 40, 41, 44-49, 51-52, 54 and 56-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Avargues et al (U.S. Patent No. 6,104,701, hereinafter, "Avargues").

With respect to claim 4, Avargues discloses, the method representing a given range of numbers with an optimized set of entries utilizing wildcards (col. 10, lines 1-10),

the given range having a beginning number and an ending number (col. 7, lines 5-37), wherein the given range includes a first sub-range, a second sub-range, a third sub-range, and a fourth sub-range, the first sub-range having lower numbers than the second sub-range, which has lower numbers than the third sub-range, which has lower numbers than the fourth sub-range, see (col. 10, lines 4-25, col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8),

representing all numbers within the sub-range (subinterval) as entries within the optimized set, see (col. 10, lines 52-63, e.g., 324+ through 325324); and

representing and optimizing the sub-ranges (subinterval, sub-subinterval) as a plurality of entries using wildcards within the optimized set, wherein the optimizing only includes the given range of numbers, see (col. 10, lines 1-67 to col. 11, lines 1-8).

Avargues does not explicitly disclose the first, second, third, and fourth sub-ranges.

However, Avargues discloses to represent and optimize the subinterval, sub-subinterval using wildcards, and complete list of resource id's in optimizing the use of wildcards from any range of values four digits, which teaches four digit values create four sub-interval of wildcards ranges, see (col. 10, lines 1-67 to col. 11, lines 1-8). And Avargues teaches 4 sub-ranges (the first, second, third, and fourth sub-ranges) to represent the ranges of number using wildcards, see (col. 8, lines 35-67 to col. 9, lines 1-67 to col. 10, lines 1-67 to col. 11, lines 1-8). Therefore, it would have been obvious a person having ordinary skill in the art the time invention made to include the first, second, third, and fourth sub-ranges in the system of Avargues to represent the range of numbers as wild

card. The wild card representation is saving the data storage to represent each sub-range of numbers.

With respect to claims 38, 49, 54 and 60, Avargues discloses the method, computer system, computer program product and apparatus for representing a range of numbers by an optimized set of hierarchically ordered sub-ranges using wildcard entries, the range having a lowest value range number and a highest value range number, wherein each of the sub-ranges includes a lowest value sub-range number and a highest value sub-range number, the method comprising: (a) generating a set of sub-ranges from the range, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63); and (b) optimizing at least one of the sub-ranges, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63), the optimizing (b) including at least: (c) determining a difference position between a lowest value sub-range number and a highest value sub-range number (col. 10, lines 25-64, for instance, highest ranges are 32+ to 325324), and (d) optimizing the sub-range based upon the difference position, see (col. 10, lines 25-64). Avargues does not explicitly disclose the maximal degree of optimization of the sub-range. However, Avargues discloses from the example (col. 10, lines 4-63), AB=32 and high is 325324, which teaches that 324000 to 325324 is maximum degree of optimization ranges to be represented as wildcards. Therefore, it would have been obvious a person having ordinary skill in the art the time invention made to disclose the maximal degree of optimization of the sub-range in the system of Avargues to represent the maximum range of numbers as wild card presentation. Because deciding the ranges

(maximum degree), is first step for wild card representation, which can optimize data storage to represent each sub-range of numbers.

With respect to claims 40, 51, and 56, Avargues discloses the comparing the lowest value sub-range number and the highest value sub-range number from the most significant digit position to a least significant digit position each, wherein the difference position is a first position where the comparing is different, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claims 41, 52, and 57, Avargues discloses, for the lowest value sub-range number, determining a number of contiguous zero digits from the least significant digit position; dropping off the number of contiguous zero digits from the lowest value sub-range number to form the counting value; and setting the magnitude value as the number of dropped contiguous zero digits, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claim 44, Avargues discloses that the second sub-range lowest value number is one more than a first sub-range highest value number, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claim 45, Avargues discloses that the first sub-range is formed of the range of numbers starting at the lowest value range number up to but not including a first range number divisible by ten, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claim 46, Avargues discloses that the lowest range number is divisible by an n th power of ten, the first n th sub-ranges each have zero entries, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

With respect to claims 47 and 48, Avargues discloses that each of the range of numbers represents a telephone number and router address, see (col. 2, lines 54-67 to col. 2, lines 1-6).

With respect to claims 58 and 59, Avargues discloses that the counting value is divisible by ten then the set of programming instructions further includes: computer code for forming a new counting value by dropping zero digits off of the counting value starting at a least significant digit position; and computer code for incrementing the magnitude value by the number of dropped zero digits, wherein when the counting value is equal to the limiting value, then the optimizing (d) ends for the sub-range, see (col. 7, lines 5-37, col. 9, lines 46-67 to col. 10, lines 1-63).

Allowable Subject Matter

5. Claims 39, 42-43, 50, 53 and 55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's remarks, filed on April 28, 2003, argued that the prior art (Avargues et al, U.S Patent No. 6,104,701) does not teach or suggest the representing and optimizing the second, third, and fourth sub-ranges using wild cards within optimized set, the given range of numbers. However, Avargues discloses that the optimizing the use of wildcards from any range of values of four digits, which teaches that four digit numbers can be used as four wildcard ranges for the first, second, third and fourth sub-ranges, see (col. 10, lines 5-10). And the example shows that the given whole ranges are low=324000 and high 325324, and the given four range of numbers (first, second, third and fourth sub-ranges) are for last four digit (32+), see (col. 10, lines 25-64). And Avargues discloses that given ranges vary based on the whole number of ranges (col. 7, lines 5-37, for instance, for whole ranges 3300-3399, can be represented with 2 (last two digits) wild cards sub-ranges). And applicant's remarks argued that the prior art does not teach or suggest the maximal degree of optimization of the sub-range (newly added subject matter). However, Avargues still discloses from the example (col. 10,

lines 4-63), AB=32 and high is 325324, which teaches that the ranges for the numbers of 324000 to 325324 are the maximum degree of optimization ranges to be represented as wildcards.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hagerman et al (U.S. Patent No. 6,219,821) discloses the system for design verification system verifies whether first and second representations of a circuit design match. The system includes a processor assembly and a memory that stores a first hierarchy of elements as the first representation of the design, a second hierarchy of elements as the second representation of the design, and a map entry that identifies a correspondence between an element of the first hierarchy and an element of the second hierarchy. The processor assembly performs a read operation that reads the map entry from the memory; a generate operation that generates other map entries according to the read map entry, the generated other map entries identifying other correspondences between the elements of the first hierarchy and the elements of the second hierarchy; a store operation that stores the generated other map entries in the memory such that the map entry and the generated other map entries form a set of map entries stored in the memory; and a compare operation that compares the first representation with the second representation according to the set of map entries. The result of a comparison

between the first and second representations indicates whether the first representation matches with the second representation.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

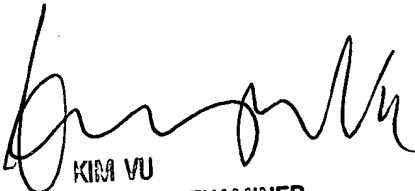
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isaac M Woo whose telephone number is (703) 305-0081. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Y Vu can be reached on (703) 305-4393. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

IMW
July 14, 2003


KIM VU
SUPERVISORY PATENT EXAMINER
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